

BEFORE THE
Federal Communications Commission

WASHINGTON, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)

)
)
Satellite Delivery of Network Signals)
to Unserved Households for)
Purposes of the Satellite Home)
Viewer Act)

CS Docket No. 98-201

RM No. 9335

RM No. 9345

To: The Commission)
)
)

**COMMENTS
OF**

THE NATIONAL RURAL TELECOMMUNICATIONS COOPERATIVE

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TABLE OF CONTENTS

Summary	i
I. BACKGROUND	2
II. COMMENTS	9
A. The Notice Disregards Legitimate Consumer Interests and Downplays the Commission's Ability to Fix the Grade B Problem.	9
B. Revised Grade B Signal Strength Standards Should be Used by the Commission for SHVA Purposes.	16
C. The Commission's Current Predictive and Measurement Models are Woefully Inadequate for SHVA Purposes	19
D. The Commission Should Use TIREM and Revised Measurement Procedures to Determine Whether Households are "Unserved" for Purposes of the SHVA	21
E. The Commission's Initial Regulatory Flexibility Analysis Ignores the Impact of the Proposed Rules on Small Businesses Such as Those of NRTC's Members Distributing DBS Services	24
III. CONCLUSION	25

SUMMARY

The National Rural Telecommunications Cooperative ("NRTC") appreciates the Commission's prompt action in response to NRTC's Emergency Petition to address the Grade B definition as it applies to the "unserved household" restriction of the Satellite Home Viewer Act ("SHVA"). The Grade B standard developed by the Commission in the 1950s is clearly out of date in today's competitive multichannel video distribution marketplace. NRTC urges the Commission to modernize the Grade B signal strength standards to more accurately reflect which households cannot actually receive an acceptable signal through a conventional roof top antenna: 70.75 dBu for low-band VHF, 76.5 dBu for high-band VHF, and 92.75 dBu for UHF.

Viewers today have much more heightened expectations of picture quality than did viewers in the 1950s. To ask these types of viewers to forsake their high quality distant network satellite service in return for analog, over-the-air local pictures deemed "acceptable" pursuant to some 1950s standard is wholly inappropriate, as well as counterproductive to the development of a vibrant, competitive MVPD market.

NRTC believes the Commission has unfairly prejudged certain critical issues in this proceeding, and has failed to protect adequately rural consumers who are currently unable to view acceptable pictures over-the-air but are prohibited from receiving distant network signals by satellite. In particular, the Commission's conclusion in the Notice that "many, if not most" of the one million or so households whose distant network satellite service will soon be terminated as a result of the Miami District Court's preliminary injunction are unauthorized to receive those signals, is premature and inappropriate. NRTC believes — despite the Commission's disclaimer — that many

households whose distant network service would have been terminated by the Miami District Court's preliminary injunction may well be able to continue to receive network signals by satellite under a more appropriate and up-to-date definition Grade B signal strength.

NRTC supports the Satellite Broadcasting and Communications Association ("SBCA") in urging the Commission to utilize revised signal strength standards and TIREM, rather than Longley-Rice, to determine whether households are "unserved" for purposes of the SHVA. TIREM, more than any other methodology currently available, is best able to predict whether a household in fact can receive a signal of Grade B intensity from the local affiliate. Additionally, the Commission should amend its signal measurement methodology, which currently is inappropriate to measure actual signal reception at individual households.

Lastly, NRTC urges the Commission to revisit the conclusion in its Initial Regulatory Flexibility Analysis that its proposed rules will have no effect on any small businesses. Although not DBS licensees, many of NRTC's members are small businesses distributing DBS programming. The viability of their DBS businesses will be affected by the rules adopted in this proceeding.

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**COMMENTS
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Pursuant to Section 1.430 of the Commission's Rules and Regulations, the National Rural Telecommunications Cooperative ("NRTC"), by its attorneys, hereby submits these Comments in response to the Notice of Proposed Rulemaking ("NPRM" or "Notice") in the above-captioned proceeding.^{1/} NRTC is pleased that the Commission has moved quickly in response to NRTC's Emergency Petition to address, through a rulemaking proceeding, the shortcomings of its Grade B definition as it applies to the "unserved household" restriction of the Satellite Home Viewer Act ("SHVA").^{2/} NRTC is extremely concerned, however, that the Commission appears to be reluctant to tackle

^{1/} Notice of Proposed Rule Making, 63 Fed. Reg. 67439 (released December 7, 1998) ("NPRM" or "Notice").

^{2/} Emergency Petition for Rulemaking of the National Rural Telecommunications Cooperative, Definition of an Over-the-Air Signal of Grade B Intensity for Purposes of the Satellite Home Viewer Act, filed July 8, 1998, placed on Public Notice August 5, 1998, RM No. 9335.

head-on the root problem identified in this proceeding: the fact that the Commission's "Grade B" standard developed in the 1950s is woefully out of date in today's competitive multichannel video distribution marketplace. Further, NRTC believes the Commission has inappropriately prejudged certain critical issues in this proceeding, and has failed to protect adequately rural consumers who are currently unable to view acceptable pictures over-the-air yet are prohibited from receiving distant network signals by satellite. We urge the Commission to revisit several of the tentative conclusions in its Notice; to update and revise the Grade B standard to more accurately reflect which households cannot actually receive an acceptable signal over-the-air through a conventional roof top antenna; to establish a more realistic predictive model to qualify viewers for distant network service; and to adopt a new measurement procedure to resolve disputes over a household's "served" status. The Commission must act forcefully on behalf of consumers across the country to enable satellite reception of distant network signals at households that are unable in fact to receive acceptable local network signals over-the air.

I. BACKGROUND

1. NRTC is a non-profit cooperative association comprised of 550 rural electric cooperatives and 279 rural telephone systems located throughout 48 states. NRTC's mission is to assist its members and affiliates in meeting the telecommunications needs of more than 30 million American consumers living in rural areas. Through the use

of satellite distribution technology, NRTC is committed to extending the benefits of information, education and entertainment programming to rural America, on an affordable basis and in an easy and convenient manner, just as those services are available over cable in more populated areas of the country. In short, NRTC seeks to ensure that rural Americans receive the same benefits of the information age as their urban counterparts.

2. In 1992, NRTC entered into an agreement with Hughes Communications Galaxy, Inc., the predecessor in interest to DirecTV, Inc. ("DIRECTV"), to launch the first high-powered DBS service offered in the United States. NRTC members and affiliates invested more than \$100 million to capitalize the first DBS launch, and in return received distribution rights for DirecTV programming ("DirecTV®") in specific regions of the country. NRTC, its members, and affiliated companies currently market and distribute up to 185 channels of popular cable and broadcast programming -- including network signals -- to nearly 900,000 rural households through DBS and C-band technology. With only 2% of its customer base residing in areas served by cable, NRTC's ability to provide these services is crucial to maintaining information access and a higher quality of life for rural America.

3. As noted by the Commission, NRTC filed an Emergency Petition for Rulemaking to Define an Over-the-Air Signal of Grade B Intensity for Purposes of the

Satellite Home Viewer Act ("Emergency Petition") on July 8, 1998.^{3/} The Emergency Petition was filed to prevent the then imminent, massive disenfranchisement of a million or more households resulting from a Florida District Court's interpretation of the "unserved household" provisions of the SHVA.^{4/} In its Emergency Petition, NRTC urged the Commission to address this crisis facing viewers across the country by establishing a consumer-friendly, understandable and fair definition of "an over-the air signal of Grade B intensity" for purposes of applying the "unserved household" restriction of the SHVA, 17 U.S.C. §119.^{5/}

4. Two days after NRTC filed its Emergency Petition, the Florida District Court issued its Preliminary Injunction.^{6/} Effective October 8, 1998, the court prohibited

^{3/} NPRM at ¶1.

^{4/} CBS Inc., et al. v. PrimeTime24 Joint Venture, Order Affirming in Part and Reversing in Part Magistrate Judge Johnson's Report and Recommendation, 9 F.Supp.2d 1333 (S.D. FL. May 13, 1998).

^{5/} (10) Unserved Household. The term "unserved household", with respect to a particular television network, means a household that, among other things:

(A) cannot receive, through the use of a conventional outdoor rooftop receiving antenna, an over-the-air signal of grade B intensity (as defined by the Federal Communications Commission) of a primary network station affiliated with that network, and

17 U.S.C. §119(d)(10)(emphasis added).

^{6/} CBS Inc., et al., Supplemental Order Granting Plaintiff's Motion for Preliminary (continued...)

PrimeTime 24, the satellite carrier, from providing CBS and Fox network programming to any customer within an area shown on Longley-Rice propagation maps as receiving a signal of at least Grade B intensity from a CBS or Fox primary network station.^{7/} By definition, under Longley-Rice, huge numbers of households will be banned from receiving distant network signals by satellite, even though they cannot in fact receive an over-the-air signal of Grade B intensity from the local affiliates.

5. The projected impact of the Florida District Court's Preliminary Injunction was a concern not only to consumers, NRTC and the direct-to-home satellite industry,^{8/} but to a wide range of public figures. As recognized by several members of Congress and the FCC Chairman, the termination of distant network signals to these households will be devastating to the growth of competition in the Multichannel Video Programming Distribution ("MVPD") market. For example, the Honorable John McCain, Chairman of the Senate Committee on Commerce, Science and Transportation and the Honorable Tom Bliley, Chairman of the House Committee on Commerce, expressed their concern over

^{6/}(...continued)
Injunction (S.D. FL. July 10, 1998) (Civil Action No. 96-3650-NESBITT).

^{7/} Id. at pp. 2-3.

^{8/} On August 18, 1998, EchoStar Communications Corporation filed a Petition for Declaratory Ruling and/or Rulemaking With Respect to Defining, Predicting and Measuring "Grade B Intensity" For Purposes of the Satellite Home Viewer Act ("EchoStar Petition"), which was placed on Public Notice August 26, 1998, RM No. 9345. The EchoStar Petition is similar in many respects to NRTC's Emergency Petition -- it urged the Commission to adopt a Grade B predictive model which predicts the outermost boundary at which 99% of households receive a Grade B signal 99% of the time with 99% confidence.

the impact of the Preliminary Injunction and requested that FCC Chairman William E. Kennard provide a preliminary estimate of the impact of the Preliminary Injunction on consumers and MVPD competition. Chairman Kennard responded that the fallout of the injunction is "an impending 'train wreck' that need not occur." Chairman Kennard indicated that by February 1, 1999, the Commission could conclude an expedited rulemaking proceeding establishing ways to improve implementation of the SHVA for those consumers who are unable to receive an adequate local over-the-air signal. He expressed his belief that the court "can and should" delay the October 8th compliance date until the FCC's expected rulemaking proceeding is completed.

6. Notwithstanding the fact the Broadcasters denied in their responses to the Petition for Rulemaking that an emergency situation was presented by the imminent disenfranchisement of one million or more satellite subscribers, the broadcasting and satellite industries on September 18, 1998 reached an agreement on a set of principles designed to ensure that the implementation of the Preliminary Injunction would be delayed until February 28, 1999. On September 30, 1998, the Court approved the parties' agreement to delay the effective date of the Preliminary Injunction to February 28, 1999.^{2/}

7. On November 17, 1998, the Commission released a Notice of Proposed Rulemaking in response to the NRTC and EchoStar Petitions. The Notice sought

^{2/} CBS Inc., et al., Order Concerning Implementation of Preliminary Injunction (September 30, 1998)(CIV-Nesbitt No. 96-3650).

comments on four issues raised in connection to the Petitions for Rulemaking and the court decisions, (1) the extent of the Commission's authority to proceed, (2) Grade B signal strength definitions, (3) Grade B prediction models and methodologies, and (4) individual household measurements.

8. Regarding the scope of its authority, the Commission tentatively concluded that Congress did not intend to "freeze" the definition of Grade B, as it existed in 1988 when the SHVA was enacted.^{10/} However, the Commission made no firm conclusions as to the extent of its authority to revise its Grade B rules specifically for the purposes of the SHVA or to develop a model for predicting whether an individual household can receive a signal of Grade B intensity for purposes of the SHVA.^{11/} The FCC did conclude that its authority to define Grade B signal intensity reasonably includes the authority to adopt a method of measuring signal intensity at an individual household.^{12/}

9. The Commission requested comments on the wisdom of changing the definition of Grade B signal intensity so that truly unserved households can be better identified. With respect to defining Grade B signal strength, the FCC sought input addressing possible changes in the field strength levels specified in section 73.683 of its

^{10/} NPRM at ¶20.

^{11/} Id. at ¶¶ 22, 23.

^{12/} Id. at ¶25.

rules. The Commission also concluded that it cannot modify the Grade B intensity so much that it effectively equals or exceeds Grade A signal intensity.^{13/}

10. The Commission recognized that predictive models can be effective proxies for individual household measurements,^{14/} and asked for comments and proposals on developing a methodology for accurately predicting whether an individual household is able to receive a signal of Grade B intensity. The Commission tentatively concluded that its traditional predictive methodology for determining a Grade B contour, outlined in section 73.684 of the Commission's rules, was insufficient for predicting signal strength at individual households.^{15/} Instead, the FCC favored the Longley-Rice propagation model, as implemented for DTV, to "refine the Grade B service prediction for purposes of SHVA determinations."^{16/} Lastly, the Commission asked for comments and proposals to develop an easy-to-use and inexpensive method for testing the strength of a broadcast network signal at individual households.

^{13/} Id. at ¶28.

^{14/} Id. at ¶30.

^{15/} Id. at ¶33.

^{16/} Id. at ¶34.

II. COMMENTS

A. The Notice Disregards Legitimate Consumer Interests and Downplays the Commission's Ability to Fix the Grade B Problem.

11. The Commission's NPRM presents a vehicle for the Commission to prevent the massive disenfranchisement of millions of households resulting from the Miami District Court's Preliminary Injunction. However, before even evaluating the evidence in this proceeding, the Commission appears determined not to exercise its full statutory authority to prevent the termination of satellite network services to those households targeted by the Miami District Court as "served" but which cannot in fact receive an acceptable over-the-air signal of Grade B intensity from the local affiliate. In the NPRM, the Commission states without explanation that:

we do not appear to have the statutory authority to prevent most of PrimeTime 24's subscribers from losing their network service under the Miami preliminary injunction (and under a possible permanent injunction). The evidence in the Miami and Raleigh court cases strongly suggests that many, if not most, of those subscribers do not live in "unserved households" under any interpretation of that term. NPRM at ¶15.

12. Without considering any of the evidence to be presented in this rulemaking proceeding, the Commission's statement above is clearly premature, inappropriate and puzzling. It suggests that the Commission agrees with the Miami District Court that "many if not most" of the households deemed "served" by the

Longley-Rice predictive model can in fact receive an acceptable signal of Grade B intensity from the local affiliate through a conventional rooftop antenna. Considering that the purported purpose of this rulemaking is to develop a better method of defining, measuring and predicting Grade B signal strength at individual homes so that it may be determined *which* households *do not* in fact receive an acceptable local signal and *should* be entitled to receive distant network signals by satellite, the Commission's premature conclusion that "many if not most" of the subscribers affected by the preliminary injunction are not "unserved" under *any* definition (even one not yet established by the Commission) undermines the Commission's ability to address and fix this problem. It reveals a blatant disregard for those consumers who truly cannot receive an acceptable signal of Grade B intensity from the local affiliate but who will nonetheless have their network satellite service terminated because they are predicted to receive an acceptable signal under the Miami Court's application of the Longley-Rice model.

13. The Commission notes in ¶7 of the NPRM that 700,000 to one million subscribers may be affected by the preliminary injunction, but in no way does the evidence presented by the broadcasters, noted by the Commission in footnote 34, prove that "many" or "most" of these individual households can receive a signal of Grade B intensity from the local affiliate under a definition yet to be established in this proceeding. Until the FCC establishes an appropriate definition of Grade B signal strength for SHVA purposes, as well as an appropriate signal measurement and predictive methodology, there is no practical way to determine *which* consumers actually receive an

acceptable Grade B signal. Clearly, the evidence provided by the broadcasters in the Miami and Raleigh cases is not sufficient to determine that "many" or "most" households affected by the Preliminary Injunction are "unserved" *under a definition of Grade B signal strength that the Commission has not yet even adopted.*

14. Throughout the years, NRTC has received numerous complaints from its subscribers regarding their eligibility to receive network satellite service. Many of these consumers have complained that they cannot receive an acceptable picture from their local network affiliate through a "conventional" rooftop antenna or even through more sophisticated receiving devices. They have protested their inability to receive distant network signals via satellite, even though they cannot receive an acceptable picture over-the-air from their local network affiliate. Many of them have expressed their frustration to the Commission in informal comments filed in response to NRTC's Emergency Petition and the EchoStar Petition.^{17/} NRTC believes that "many if not most" of these

^{17/} See e.g., Letter of Mr. and Mrs. Donald C. Nelson to FCC (July 27, 1998); electronic mail of Andrew S. to the FCC (Aug. 29, 1998); electronic mail of John Darsey to the FCC (Aug. 22, 1998); electronic mail of "heidi", heidi@olypen.com, to the FCC (July 21, 1998); electronic mail of Bob Fontaine to the FCC (Aug. 12, 1998); electronic mail of Kenneth J. Varner to Senator Robert Byrd (Aug. 14, 1998); electronic mail of Stan Jackson Jr. to the FCC (Sept. 1, 1998); electronic mail of Chuck Boerner to the FCC (Aug. 10, 1998); electronic mail of Edward Hawanczak to the FCC (Aug. 5, 1998); electronic mail of Mark Sorensen to the FCC (Aug. 6, 1998); electronic mail of Richard Rogers to the FCC (Aug. 13, 1998); electronic mail of Serena Sills to the FCC (Aug. 8, 1998); electronic mail of Rev. Romeyn Kipp to the FCC (Aug. 22, 1998); electronic mail of Martin Ledford to the FCC (Aug. 27, 1998); electronic mail of Larry Jackson to the FCC (Sept. 1, 1998); electronic mail of Tim Dinnel to the FCC (Aug. 31, 1998); electronic mail of Frederick Brown to the FCC (Aug. 30, 1998); electronic mail of Joseph W. McConnaughey to the FCC (Aug. 29, 1998); letter of Earl L. McCluer to Regina

(continued...)

consumers have a legitimate concern that should be carefully addressed by the Commission, not dismissed out-of-hand as being violative of the patently deficient Longley-Rice model applied by the Miami Court.

15. Instead of addressing these consumers' concerns by carefully weighing the comments, reply comments and technical data which will be submitted in response to this NPRM, the Commission appears to have jumped to the conclusion in its Notice that it is largely powerless to change the anti-consumer effect of the Miami District Court's preliminary injunction. Until the Commission analyzes the information submitted in this proceeding and, based on this information, determines how to redefine, predict and measure Grade B, it is simply *unknown* whether "many if not most" of the consumers affected by the preliminary injunction are "illegal."

^{17/}(...continued)

Kenney (recv'd Sept. 17, 1998); letter of Thomas J. Erickson to Regina Keeney (recv'd Sept. 17, 1998); electronic mail of Andrew Morris to the FCC (Aug. 26, 1998); electronic mail of Shelle Enright to the FCC (Aug. 31, 1998); electronic mail of Ron and Dot Bernard to the FCC (Aug. 31, 1998); electronic mail of Tim Verpoorten to the FCC (Aug. 18, 1998); letter of Susan Noell Robinette to the FCC (Sept. 11, 1998); letter of Wyman Martin to the FCC (Aug. 22, 1998); letter of Sidney Sue Shank to the FCC (Aug. 7, 1998); letter of Cynthia L. Bishop to WTXL-TV (ABC) (Sept. 1, 1998); letter of Richard O. Johnstone to the FCC (Aug. 13, 1998); letter of Mr. and Mrs. Vernon E. Pierce to the FCC (Aug. 11, 1998); letter of Richard S. Johnson to the FCC (Aug. 20, 1998); letter of Ruth Glirlas to the FCC (Aug. 19, 1998); letter of Charles and Jean Oleheiser to the FCC (July 23, 1998); letter of Eleanor Matsis to the FCC (July 23, 1998); letter of Nancy S. Peterson to the FCC (July 21, 1998); letter of Barbara Anne Burke, MD to the FCC (July 29, 1998); letter of Richard and Roberta Bockovich to the FCC (July 23, 1998).

16. As the Commission evaluates the need to modify the current Grade B standard, NRTC believes that the current off-air antenna mapping project from the Consumer Electronics Manufacturers Association (CEMA) shows that large numbers of consumers residing within the existing Grade B (and even some Grade A and City Grade) contours face serious limitations in receiving broadcast signals. This effort, which began in 1997 to provide retailers with a reference guide for recommendations on off-air antennas, involves the use of traditional Longley-Rice coverage maps which have then been subjected to computer overlay analysis to account for the impact of a wide array of "real world" factors such as multipath interference and enhanced (three second) terrain data bases. In addition, the maps, created by Data World, address the need for so-called "city special" antennas in many consumer installations. These specialized antennas, which must be individually engineered for each DMA, are required due to the fact that broadcast towers are often geographically dispersed.

17. The new CEMA maps indicate that the assumptions of local broadcast reception drawn from the standard Longley-Rice Grade B service maps are seriously flawed. For example, the map for the Washington, DC television market, finds that some consumers living in close-in suburbs such as Alexandria, Virginia and Oxon Hill, Maryland (both within the Grade A contour) require not only a directional antenna, but also an electronic preamplifier to receive a usable signal. This situation becomes even more prevalent in areas as close as Fairfax and Tysons Corner, Virginia.

18. While CEMA has yet to complete maps for all DMAs, NRTC urges the Commission to carefully analyze those that have been published. When these maps, which have been validated by field measurements conducted by engineers from Hubbard Broadcasting (one of the pioneers in the television industry and holder of 10 TV station licenses) are compared with the existing coverage maps, the need for an update to the 1950s-era broadcast standard and new predictive models becomes clear.

19. In the Notice, the Commission recognizes its Congressionally mandated responsibility with respect to the SHVA. The Commission states that “[t]he federal courts and the Copyright Office of the Library of Congress are primarily responsible for enforcing and administering the copyright laws, but Congress unquestionably turned to the Commission’s expertise when it defined unserved household in reference to a ‘signal of Grade B intensity (*as defined by the Federal Communications Commission*).’”^{18/} The Commission agrees too with the analysis put forth by NRTC, DIRECTV, EchoStar and others that Congress did not intend to “freeze” the meaning of a “signal of Grade B intensity” for purposes of the Act when the SHVA was enacted, but rather the meaning can be modified and updated by the Commission as appropriate over time.^{19/} The

^{18/} NPRM at ¶20, emphasis in original.

^{19/} Id. at ¶ 21. Indeed, as recognized by the FCC in its Notice, Congress did not make a specific reference to another statute, rule section, or regulation when it defined “unserved household” in the SHVA. The FCC also agrees with NRTC that the Supreme Court’s decisions in Lukhard v. Reed, 481 US 368, 379 (1987) (“it is not true and whenever Congress enacts legislation using a word that has a given administrative interpretation it means to freeze that administrative interpretation in place”) and

(continued...)

Commission would be dismissing its Congressionally mandated responsibility of “defining” a signal of Grade B intensity if it were simply to accept the Miami District Court’s interpretation of “unserved households.”

20. As NRTC argued in its Emergency Petition and comments in support of its Emergency Petition, the FCC is free to -- and should -- update and define the term “Grade B intensity” for purposes of the SHVA. The Commission recognized in its Notice that “an expedited rulemaking is necessary to protect satellite subscribers who are truly unserved from losing network service.”^{20/} The Commission went on to state that its interest in the rulemaking proceeding also includes promoting competition among MVPDs.^{21/}

21. As discussed below, NRTC urges the Commission to meet its stated interest of protecting consumers and promoting competition by establishing a new, more accurate definition of the Grade B standard. NRTC also urges the Commission to utilize more realistic measurement methodologies and to adopt TIREM rather than Longley-Rice 1.2.2 as the model to predict whether households are “served” or “unserved.”

^{19/}(...continued)

Helvering v. Wilshire Oil Co., 308 US 90 (1939) support the position that the meaning of “signal of Grade B intensity” can be modified over time by the Commission and incorporated into the SHVA.

^{20/} NPRM at ¶ 15.

^{21/} Id.

22. The Commission should avoid making hasty determinations that “many, if not most” of the subscribers affected by the Miami and Raleigh injunctions, “do not live in ‘unserved households’ under any interpretation of that term.”^{22/} The Commission has the statutory authority and responsibility to define “Grade B signal strength,” as required by the specific wording of the SHVA. In so doing, NRTC believes -- despite the Commission’s disclaimer -- that many households whose distant network service would have been terminated by the Miami District Court’s preliminary injunction may well be able to continue to receive network signals by satellite under a more appropriate and up-to-date definition of the term.

B. Revised Grade B Signal Strength Standards Should be Used by the Commission for SHVA Purposes.

23. In the Notice, the Commission pointed out that the Grade B intensity standard was developed *in the 1950s* as a Commission-defined measure of the strength of a television station’s broadcast signal necessary to provide what the median observer at that time would have deemed an “acceptable” picture.^{23/} Use of that standard to identify individual unserved households under the SHVA, of course, was not an issue at that time. In fact, although the Grade B standard has been used for a variety of purposes since then,

^{22/} Id.

^{23/} NPRM at ¶4; Channels 2-6: 47 dBu, Channels 7-13: 56 dBu, Channels 14-69: 64 dBu (47 C.F.R. §73.683)

it has never been used by the Commission to measure signal strength at any specific location, whether or not related to the SHVA. The Commission's rules even go so far as to expressly exclude use of the Grade B intensity standard for that type of purpose.^{24/}

24. Additionally, according to the Commission, Grade B represents the field strength of a signal 30 feet above ground that was strong enough, in the absence of *any* man-made noise or *any* interference from other stations, to provide a television picture that the median observer in the 1950s would have deemed "acceptable." Of course, not every viewer today has a 30 foot antenna, and there is an ever-increasing multitude of man-made noise and other radio frequency interference from other sources that impairs reception to one degree or another at virtually all households. For instance, the assumption underlying the Grade B signal strength value that in rural areas the Grade B signal is broadcast in a noise-free environment is sadly out of date. The Commission itself, citing to a 1977 Engineering Report, recognized as much in the NPRM.^{25/} Clearly,

^{24/} 47 C.F.R. §73.683(c).

^{25/} NPRM at ¶ 27. In 1977, the FCC's Office of Chief Engineer Research and Standards Division ("Engineering Division") studied the planning factors pertinent to the determination of TV station coverage areas and identified those factors whose value should be updated, "because of technological advancements, re-evaluation of physical phenomena . . . , change in environmental factors (e.g., higher man-made noise levels) or changes in the Commission's policy." The Engineering Division concluded that, "the assumption of 0 db to overcome rural noise in these 'rural areas' is probably no longer valid because of the increased number of high voltage power lines and motor vehicle traffic volume." Gary S. Kalagian, A Review of the Technical Planning Factors for the VHF Television Service, Federal Communications Commission Office of Chief Engineer Research & Standards Division, March 1, 1977.

the assumption regarding zero level interference in the type of outlying rural areas often served by NRTC is no longer valid.

25. Most importantly, *viewers today undoubtedly have much more heightened expectations of picture quality than did viewers in the 1950s.* For more than 40 or 50 years, viewers have become accustomed to receiving increasingly higher quality signals over the air and through cable, VCRs and other media outlets. In particular, viewers today who have elected to pay for and receive signals via satellite technology already are quite accustomed to receiving a high quality digital picture. To ask these types of viewers to forsake their high quality distant network satellite service in return for analog, over-the-air local pictures deemed "acceptable" pursuant to some 1950s standard is completely inappropriate, as well as counterproductive to the development of a vibrant, competitive MVPD market.

26. Although it seems obvious that "Grade B" no longer means what it meant in the 1950s (which appears to be the root of the Grade B "problem" with the SHVA), the Commission has not proposed in the NPRM to change the Grade B standard to reflect the modern world of telecommunications. Instead, the Commission requested "comments, supported by evidence" within 20 days regarding "any claimed changes to the assumptions made (in the 1950s) in deriving the Grade B signal intensity."^{26/}

^{26/} NRPM at ¶27.

27. According to the Engineering Consultant for the Satellite Broadcasting and Communications Association (“SBCA”), the Commission should immediately adopt Grade B signal strength values of 70.75 dBu for low-band VHF stations, 76.5 dBu for high-band VHF stations, and 92.75 dBu for UHF stations. These values represent high -- but conservative -- numbers in a range of values set forth in SBCA’s attached Engineering Statement. They reflect the effects of some of the factors present today that were not present when Grade B was developed in the 1950s, such as vegetation, buildings, other obstructions and terrain, but do not include man-made noise, ghosting (multipath) or consumers’ higher expectations of picture quality. NRTC urges the Commission to adopt these more realistic signal strength values, as requested by SBCA.

C. The Commission’s Current Predictive and Measurement Models are Woefully Inadequate for SHVA Purposes.

28. As pointed out by the Commenters in response to NRTC’s Emergency Petition and the EchoStar Petition, two different Federal District Courts have recently applied two different legal tests in construing the “unserved household” restrictions. The Florida District Court’s preliminary injunction references Grade B signal intensity based on the Longley-Rice predictive model. As mentioned above, however, the Longley-Rice model, as with traditional Grade B contours, is based on extremely low and unrealistic probabilities: an acceptable over-the-air signal is received at only 50% of the locations, only 90% of the time, with only 50% confidence. Moreover, although Longley-Rice accounts for certain terrain irregularities, it does not consider the radio interference

environment, morphology (trees, plants, etc.), buildings, or other man-made obstructions. More starkly, the North Carolina District Court simply struck a 75 mile circle around the transmitter site and prohibited retransmission of distant network signals within that zone, even though the FCC's rules do not contemplate a 75 mile zone for any such purpose. Neither of these methodologies accurately predicts whether a particular household is actually "served" or "unserved" by the local affiliate.

29. Beyond the appropriate predictive model, as the Commission itself noted, the Commission's existing Grade B measurement methodology is insufficient as a technique for measuring signal strength at individual homes.^{27/} Rather, the Commission's signal strength measurement rules were designed for TV allocation purposes, as part of a predictive measurement of broadcast interference.^{28/} They assume a roof top antenna at thirty feet above ground (higher than many rooftops); they assume that the antenna has been oriented for maximum gain with respect to individual stations (which is not true in many households); they assume that no signal loss occurs through "splitters" between the antenna and the television set (it does); they ignore obstructive terrain features beyond 10 miles from the transmitter; and they assume measurements at a 100 foot "mobile run" along the street (thereby minimizing the effect of trees, buildings and other obstructions at the individual household). Collectively, these limitations severely reduce the likelihood that viewers will actually receive an "acceptable" picture at their television set

^{27/} NPRM at ¶33, 47 C.F.R. §73.684.

^{28/} 47 C.F.R. §73.686

even though they may be predicted to receive one under the Longley-Rice model and therefore be presumptively deemed to receive a “signal of Grade B intensity” under the Florida District Court’s preliminary injunction.

30. The SHVA’s use of the term “Grade B intensity” must be defined by reference to new, more accurate methodologies that can be used both to predict and measure the specific households and geographic areas that will receive the specified measure of intensity. The “unserved household” restriction cannot be applied and enforced fairly without predictive and measurement models specifically designed for the SHVA, not for television allocation purposes.

D. The Commission Should Use TIREM and Revised Measurement Procedures to Determine Whether Households are “Unserved” for Purposes of the SHVA.

31. In its Notice, the Commission recognized that predictive models can be effective proxies for individual household measurements.^{29/} Until a precise, practical and inexpensive means for determining a particular household’s actual “served” status can be developed, NRTC agrees that a predictive model can be effectively used as a proxy for individual households measurements. The Commission proposed that the Longley-Rice propagation model, as implemented for DTV, be used to refine the Grade B service

^{29/} NPRM at ¶30.

prediction for the purpose of SHVA determinations.^{30/} NRTC continues to believe that the Longley-Rice model is not appropriate for purposes of the SHVA because (1) it is based on extremely low and unrealistic probabilities (50% of the locations, 90% of the time) and (2) it does not take into consideration the radio interference environment, morphology (trees, plants, etc.), buildings or other man-made obstructions.

32. NRTC has been working with SBCA and other members of the satellite industry to develop a realistic, fair Grade B solution. SBCA has studied various prediction methodologies and has determined that a modified version of the Terrain Integrated Rough Earth Model ("TIREM") can be used to predict more accurately whether a household can receive a signal of Grade B intensity. The TIREM methodology endorsed by SBCA takes into account important factors that affect signal propagation, including terrain, vegetation, land use, urbanization, clutter and interference.

33. TIREM methodology, like Longley-Rice, was developed by a Federal government agency, NTIA, acting for the DOD. The DOD, under contract by the Corporation of Public Broadcasting, developed TIREM to conduct "AREAPOP" studies for PBS television stations in the late 1970's. The "AREAPOP" studies utilizing TIREM showed "islands" of poor coverage, and other topographically specific coverage anomalies well within the predicted Grade B contour of television stations. TIREM is able to determine more precisely areas of actual coverage because it utilizes appropriately

^{30/} NPRM at ¶34.

conservative assumptions. TIREM's conservative assumptions do not make it particularly useful for calculating service contours or other generalized wide area coverage analysis studies (e.g. Longley-Rice), but it is the most appropriate, publicly available program for testing specific point-to-point paths, especially those with complex geometry. The TIREM methodology is explained at greater length in the engineering report SBCA is submitting along with its Comments.

34. Because TIREM, more than any other methodology currently available, can predict with greater accuracy whether a household can receive a signal of Grade B intensity from the local affiliate, NRTC supports the use of TIREM in this proceeding. NRTC understands, however, that even though TIREM is a more precise predictive methodology than Longley-Rice, some households identified by TIREM as served may, through an individual household test, prove to be unserved. Conversely, it is conceivable that a household identified as unserved by TIREM may prove to be served.

35. As SBCA suggested, the TIREM predictive model should create a "rebuttal presumption" whether a household is served or unserved. Any challenges to the presumption should be undertaken at the challenger's expense. NRTC believes that individual household measurements will very rarely be required since TIREM should provide a highly reliable prediction of a household's served status.^{31/}

^{31/} Accordingly, NRTC supports a "loser pays" policy when individual household tests are performed.

36. When measurements are required, NRTC supports revisions to the current methodology as explained in SBCA's Comments. In particular, the measurement should be taken at an accessible location as close as possible to the residence, as close as possible to actual roof height, with signal strength readings every 30 seconds for five minutes. Each reading should be appropriately adjusted to account for "splitter loss." If more than one of the ten signal strength values is less than the Grade B signal strength values described above, the household should be deemed "unserved" and eligible to receive distant network signals by satellite.

E. The Commission's Initial Regulatory Flexibility Analysis Ignores the Impact of the Proposed Rules on Small Business Such as Those of NRTC's Members Distributing DBS Services.

37. NRTC urges the Commission to revisit the conclusion in its Initial Regulatory Flexibility Analysis ("IRFA") that because small businesses do not have the financial resources necessary to become DBS licenses, none will be affected by the proposed action in the NPRM. (Appendix, Para. 7) The IRFA is plainly incorrect in concluding that the NPRM applies only to less than 15 entities "providing" DBS services through their status as DBS licensees. *Distributors* of DBS services will be affected by the NPRM as well.

38. More than 350 rural electric cooperatives across the country have less than \$11.0 million in annual receipts and are therefore deemed "small businesses." We

estimate that more than 150 are members of NRTC. Many are participating in DBS as distributors of DIRECTV® and other programming. Other non-NRTC distributors of satellite servers also may be "small businesses." The inability of these small businesses to distribute distant network signals by satellite will undoubtedly affect the viability of their businesses. Clearly, their interests in this proceeding were inappropriately discounted by the Commission in its Initial Regulatory Flexibility Analysis. This oversight must be corrected and addressed more fully by the Commission.

III. CONCLUSION

For the past several months, the Florida District Court and the broadcast industry have threatened American consumers and the DTH satellite industry with the loss (possibly permanent) of distant network satellite service. At the center of the dispute is the interpretation of the "unserved household" restriction of the SHVA. Because Congress, in the text of the SHVA, turns to the FCC to give meaning to "unserved household" by defining "a signal of Grade B intensity," NRTC petitioned the Commission to address, on an expedited basis, the Grade B definition as it applies to the "unserved household" restriction of the SHVA.

The major problem with the Commission's existing Grade B standard is that it was developed in the 1950s for completely different purposes and has not been modified since then. The Grade B field strength values provided in the Commission's rules are


based on antiquated viewer expectations of picture quality and are premised on an outdated propagation environment. As a result, households that are determined to receive a signal of Grade B intensity, as currently defined, may well not in fact receive an acceptable picture. To correct this fundamental defect in the Commission's Grade B standard, NRTC urges the Commission to update its definition of "an over the air signal of Grade B intensity" to more accurately reflect which households can actually receive an acceptable signal through a conventional roof top antenna.

NRTC also urges the Commission to adopt a more realistic predictive model and revised measurement procedures to more accurately predict and measure signal strength at individual households. SBCA has endorsed TIREM as an improved predictive methodology. Because TIREM takes into account important factors that affect signal propagation, which are ignored by the Longley-Rice model, NRTC believes that TIREM will more accurately predict which households actually receive a signal of Grade B intensity through a conventional roof top antenna. NRTC therefore supports the adoption of TIREM as a predictive model, and where individual household measurements are required, supports the measurement methodology proposed by SBCA that more accurately measures signal reception at the home — not merely in the vicinity.

WHEREFORE, THE PREMISES CONSIDERED, the National Rural Telecommunications Cooperative urges the Commission to act forcefully on behalf of consumers across the country to enable satellite reception of distant network signals at households that are unable in fact to receive acceptable local network signals over-the-air. Accordingly, NRTC urges the Commission to adopt a revised Grade B signal strength standard which reflects today's more sophisticated viewing environment; adopt TIREM as a predictive model to qualify viewers for distant network service by satellite; and adopt a revised measurement procedure to resolve disputes over a household's "served" status.

Respectfully submitted,

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